

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>B65D 73/00</b>	<b>A1</b>	(11) International Publication Number: <b>WO 98/19934</b> (43) International Publication Date: 14 May 1998 (14.05.98)
<p>(21) International Application Number: PCT/US97/20284</p> <p>(22) International Filing Date: 10 November 1997 (10.11.97)</p> <p>(30) Priority Data: U 9602836 8 November 1996 (08.11.96) ES</p> <p>(71) Applicant (for all designated States except US): THE PROCTER &amp; GAMBLE COMPANY [US/US]; One Procter &amp; Gamble Plaza, Cincinnati, OH 45202 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): PERICH, Francesc [ES/ES]; Avenida Pau Casals, 48, E-08450 Llinars de Velles (ES). BITOWFT, Bruce, Kevin [US/US]; 310 Compton Road, Wyoming, OH 45215 (US). HILL, Simon, David, Julian [GB/DE]; Alwinenstrasse 13, D-65189 Wiesbaden (DE).</p> <p>(74) Agents: REED, T., David et al.; The Procter &amp; Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217 (US).</p>		<p>(81) Designated States: AU, CN, KR, US.</p> <p>Published With international search report.</p>
<p>(54) Title: EASY OPENING DEVICE FOR CONTAINER CLOSURES</p> <p>(57) Abstract</p> <p>An easy opening device for container closures comprising a first cover (1) hinged onto a second cover or base (3) for closing an opening (5) from which articles inside the container (4) may be dispensed. There is at least one flexible and elastic flap (9) located between the two covers which opens the first cover (1) when pressure is applied to the flexible and elastic second cover or base (3) to open the first cover automatically.</p>		

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

WO 98/19934

PCT/US97/20284

## EASY OPENING DEVICE FOR CONTAINER CLOSURES

The present application relates to an easy opening device for container closures, particularly suitable for containers of laminar articles, such as moistened hand towels, which are used one by one.

Known in the art are containers provided with a closure formed by a first enclosing cover articulated in the manner of a hinge onto a base or second cover of the container having an opening with elastic flaps which permit the laminar or other type of articles inside the container to come out, whether in the form of a continuous strip or separately and folded. The first cover has the purpose of closing by pressure the opening for outlet of the laminar articles. This cover is generally flat and has to be opened by acting upon a tab or the like provided on the articulated cover. This operation presents difficulties because access to the lug is not easy and, furthermore, a certain amount of force must be exercised upon it in the direction of opening so that the second cover can come away from the means of retention by pressure.

The easy opening device of the present application has been designed in order to solve the disadvantages outlined, being of very simple embodiment and permitting the aforesaid second cover to be opened easily with just one hand.

The easy opening device for container closures is of the type formed by a first cover articulated by hinge on a base or on a second cover of the container, provided with an opening through which the articles inside the container are withdrawn, the first cover being able to adopt a stable closed position in which it is secured by pressure by a known device linked to the second cover or base of the container and other adjustable opening positions in which it is released. On the basis of this known embodiment, the device is essentially characterized in that the first articulated cover which constitutes the closure is of substantially rigid nature, of polypropylene or PET, which the cover or base on which the first cover is articulated is flexible and elastic. In the vicinity of the zone of articulation of the first cover which constitutes the closure is attached at least one flexible and elastic flap, made of natural rubber or synthetic derivatives, which tends to open the cover, so that when exterior pressure is brought to bear on the second cover or base of the container the articulated cover opens automatically.

WO 98/19934

PCT/US97/20284

2

At least one flap is fixed by its ends respectively to the first cover and to the second cover or base.

At least one flap is a separate piece with one end coupled to the articulated cover and the other resting by pressure on the base or second cover of the container.

The design also provides that at least one flap constitutes a single piece with the first articulated cover.

In one possible embodiment, the flap is situated between two spaced and aligned points of articulation which constitute a hinge.

Another version of the same device makes provision for the articulated cover to be provided with two flaps on two aligned points spaced apart from each other and constituting a hinge.

The first articulated cover and the second cover or base have means for allowing the opening of the first cover an angle of up to 180° with respect to the second one.

In a more specific embodiment, the second flexible and elastic cover presents zones marked for exercising thereupon manual pressure for opening of the articulated cover.

For a better understanding of all that is set out in this specification some drawings are attached which show, solely by way of example, a practical example of embodiment of the closing device.

In said drawings, Figure 1 is a plan view of the device in closed position; Figure 2 is a plan view of the interior side of the first articulated cover provided with an elastic flap; Figure 3 is a view similar to that of Figure 2, but the cover is provided with two flaps; Figure 4 is a detail at larger scale and in longitudinal section which shows the position of a flap when the articulated cover is open in one of the possible positions; and Figure 5 is a view similar to that of Figure 4, but in this case the cover is closed.

In the drawings, the closing device comprises a first cover 1 of hard nature and of oval or any other shape, which is articulated by means of a hinge 2 with two points of rotation 2a, which are aligned with and spaced apart from each other, onto a second cover 3 of flexible and elastic nature which tends to remain flat and which normally closes the open side of a container 4. The first cover 1 could also be articulated onto a base of the container 4.

The cover 1 is destined to close an opening 5 provided in the cover 3, generally in the bottom of a cavity 6 of same. The covers 1 and 4 have complementary means of retention (projection and groove) situated in diametrically opposite position to that occupied by the hinge 2, which means slot into each other in the closed position of the cover, keeping same secured. Said means have not been shown, since they are of known type. Moreover, the cover 1 presents a lug 7 which in the closed position

WO 98/19934

PCT/US97/20284

3

coincides with a depressed portion 8 of the cover 4 which can be used to open the cover 1 in the conventional manner.

The articulated cover 1 incorporates one or more flexible and elastic flaps 9 (Figures 2 and 3), with one end provided with a thickened section 10 destined for coupling by pressure on a space 11 provided on the internal side of the cover 1 (Figures 4 and 5). The end of the flap opposite the thickened section 10 presents a beveled edge 9a. Provision is made for the flap 9 to form a single body with one end attached to one cover or with two the two ends respectively attached to the two covers.

Figure 2 shows a single flap 9 situated between the points of articulation 2a of the hinge 2, while Figure 3 shows two flaps 9 situated beside the points of articulation 2a.

When the articulated cover is let down in order to situate it in closed position it is secured by the conventional device (not shown) and is thus retained. The flap or flaps 9 bend owing to their flexibility (Figure 5). To open the cover it is sufficient to press the flexible and elastic cover 3 in order to deform it slightly and thereby release the cover 1 from the retaining device (not shown) which was keeping it in closed position, and it opens automatically driven by the flap or flaps 9 (Figure 4) which tend to extend owing to their elasticity. The open position of the cover 1 is limited by a conventional stop device fitted between the cover and the bottom of the cavity 6 or in another suitable location allowing the opening of the cover 1 by an angle of 180° with respect to the second cover 3.

So that the user of the closing device knows the most suitable zone or zones of the cover 3 to press in order to achieve instantaneous opening of the cover 1, those zones have been indicated by means of optional markings 12.

Thanks to the easy opening device described, the user can open the cover 1 simply by pressing on the cover 4, instead of having to lift it with a finger applied under the lug 7.

Independent of the object of the invention are the materials used for manufacturing of the components of the device, the forms and dimensions of same and all the accessory details which might be presented, as long as they do not affect its essential nature.

WO 98/19934

PCT/US97/20284

4

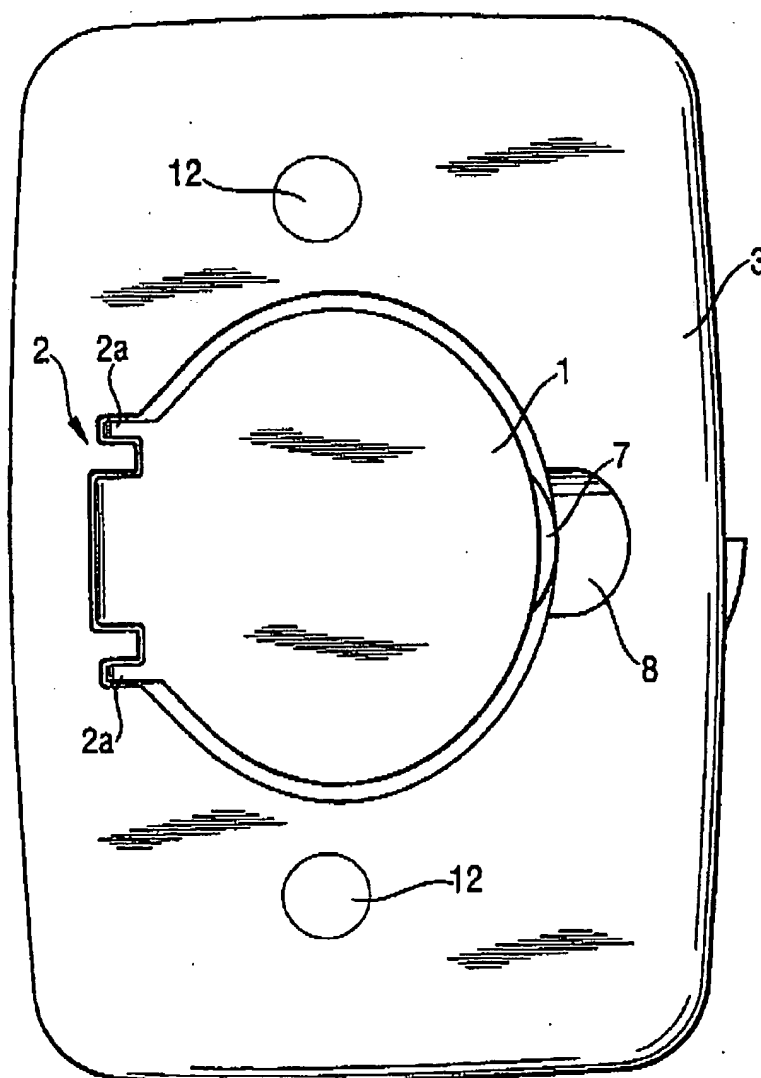
## WHAT IS CLAIMED IS:

1. Easy opening device for container closures, formed by a first cover articulated in the manner of a hinge onto a base or second cover of the container having an opening through which the articles inside the container are withdrawn, the first cover being able to adopt a stable closed position in which it remains secured by pressure by a known device attached to the second cover or base of the container and other adjustable opening positions in which it is released, essentially characterized in that the first articulated cover which constitutes the closure is of substantially rigid nature, while the cover or base on which the first cover is articulated is flexible and elastic, made of natural rubber or synthetic derivatives; in the vicinity of the zone of articulation of the first cover which constitutes the closure is attached at least one flexible and elastic flap which tends to open the cover, so that when exterior pressure is brought to bear on the second cover or base of the container the articulated cover opens automatically.
2. Easy opening device for container closures, according to claim 1, characterized in that at least one elastics flap is fixed by its ends respectively to the first cover and to the second cover or base.
3. Easy opening device for container closures, according to claim 1, characterized in that at least one flap is a separate piece with one end coupled to the articulated cover and the other resting by pressure on the base or second cover of the container.
4. Easy opening device for container closures, according to claim 1, characterized in that at least one flap constitutes a single piece with the first articulated cover and/or the second cover or base.
5. Easy opening device for container closures, according to claim 1 and either of claims 2 and 3, characterized in that at least one flap is situated between two spaced and aligned points of articulation which constitute a hinge.
6. Easy opening device for container closures, according to claim 1 and either of claims 2 and 3, characterized in that the first articulated cover and the second cover or base are attached by means of flaps and two aligned and spaced apart points constituting a hinge.
7. Easy opening device for container closures, according to claim 1, characterized in that the first articulated cover and the second cover or base have means for allowing the opening of the first cover by an angle of up to 180° with respect to the second one.
8. Easy opening device for container closures, according to claim 1, characterized in that the second flexible and elastic cover presents one or several zones marked for exercising thereupon manual pressure for opening of the articulated cover.

WO 98/19934

PCT/US97/20284

1/3

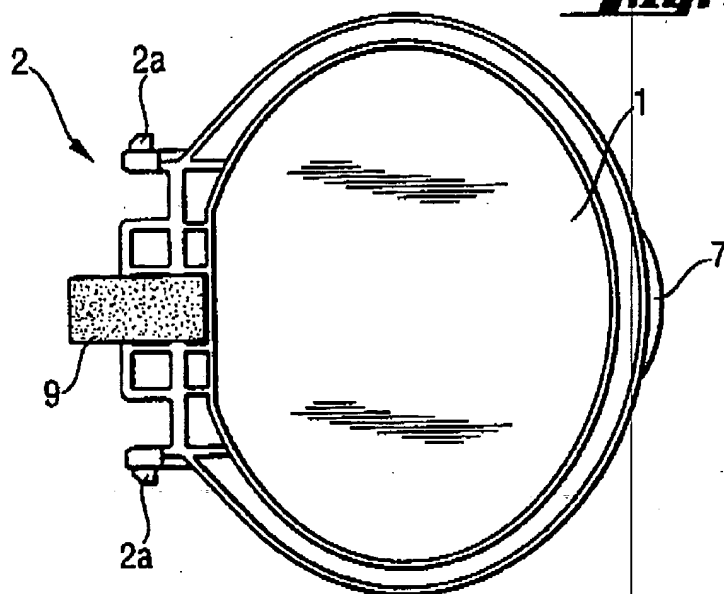
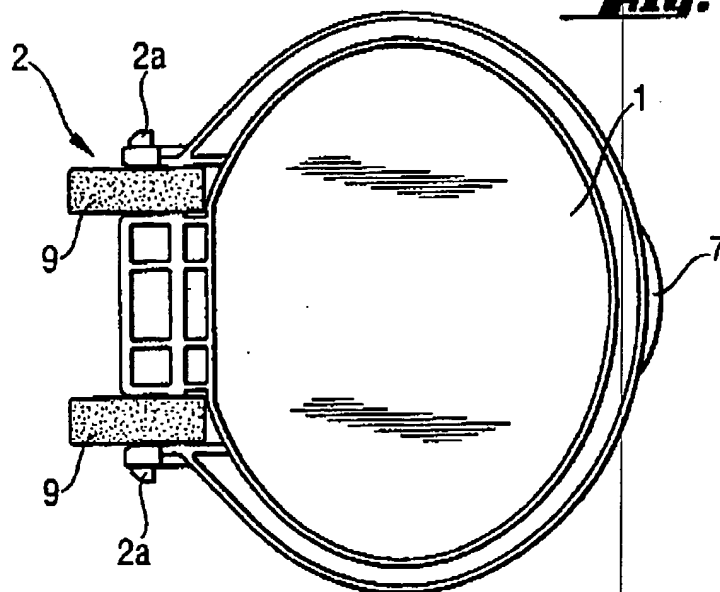
**Fig. 1**

SUBSTITUTE SHEET (RULE 26)

WO 98/19934

PCT/US97/20284

2 / 3

**Fig. 2****Fig. 3**

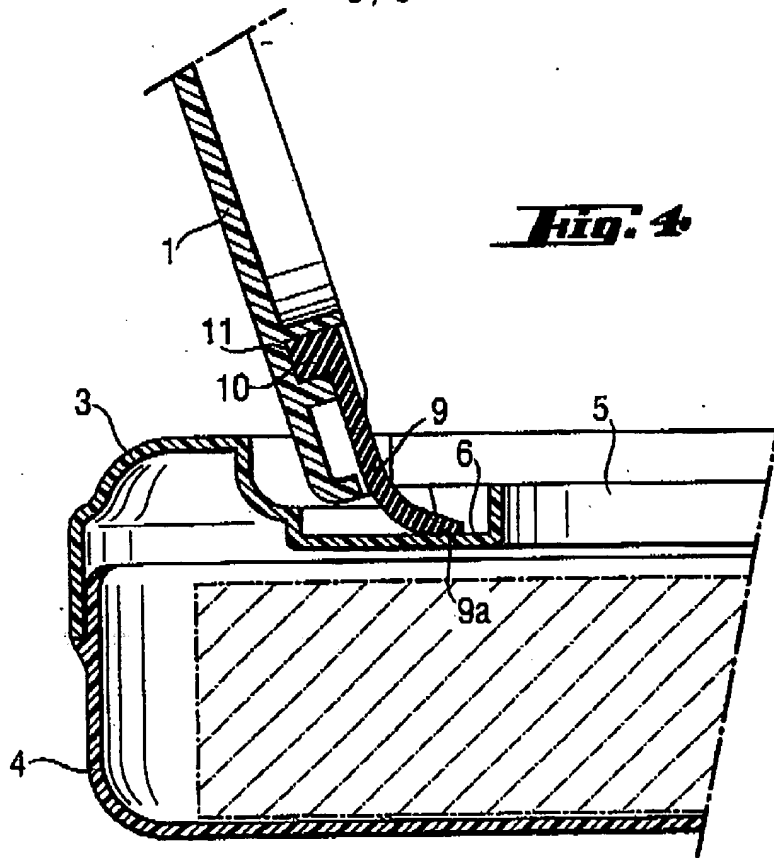
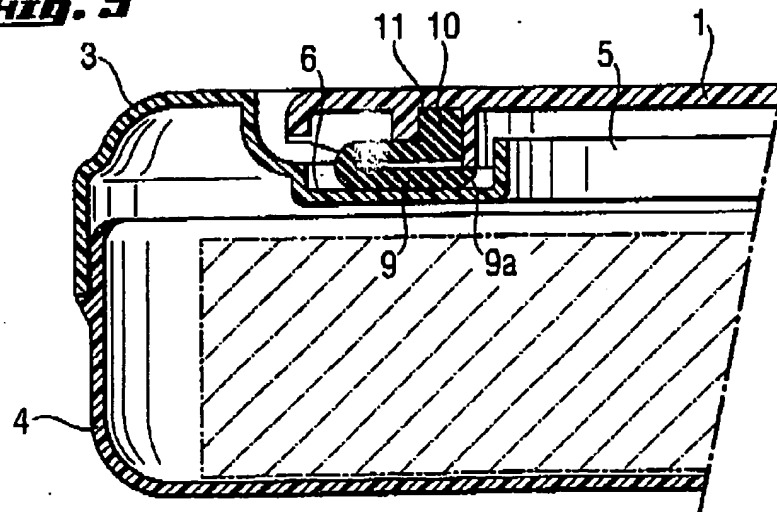
SIASTITUTE SHEET (RULE 26)



WO 98/19934

PCT/US97/20284

3/3

**Fig. 4****Fig. 5**

SUBSTITUTE SHEET (RULE 26)

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/20284

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(6) :B65D 73/00 US CL :220/259, 281, 335; 206/494 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 220/259, 281, 326, 335, 263, 264; 206/494, 1.5, 823, 581, 233; 215/235, 237, 301 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched none Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) none		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	EP 748,748 A (ISHIKOWA et al.) 18 December 1996, see entire document.	1-4,7-8
Y	US 5,542,568 A (JULIUS) 06 August 1996, see entire document.	1-4,7-8
Y	US 4,739,900 A (BORST) 26 April 1988, see entire document.	1-4,7-8
Y	US 5,501,348 A (TAKEUCHI) 26 March 1996, see entire document.	1-4,7-8
A	US 3,968,880 A (OSTROWSKY) 13 July 1976, see entire document.	1
A	AU 77,021,944 A (LIEN) 10 August 1978, see entire document.	1-4,7-8
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "B" earlier document published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "Z" document member of the same patent family		
Date of the actual completion of the international search 26 JANUARY 1998		Date of mailing of the international search report 23 FEB 1998
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230		Authorized officer NATHAN J. NEWHOUSE Telephone No. (703) 308-4158 <i>Sheila V. Young</i> Paralegal Specialist Group 3200

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/20284

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,050,737 (JOSLYN et al.) 24 September 1991, see entire document.	1-4,7-8
A	US 3,982,659 A (ROSS) 28 September 1976, see entire document.	1-4,7-8

Form PCT/ISA/210 (continuation of second sheet)(July 1992)\*

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/20284

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☒ Claims Nos.: 5-6  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet(1))(July 1992)\*